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PROCESS AND SYSTEM TO ACCESS A MULTIMEDIA VOICE SERVER  
THROUGH AN INTERNET TYPE COMPUTER COMMUNICATION NETWORK

The invention relates to a device for accessing multimedia voice servers through a computer network, particularly an Internet type network. It also relates to a process and a system enabling at least one user to 5 access a voice server through a computer communication network.

The cost of communications made using an Internet type network is particularly low. Unlike conventional telephone communications, the price is independent of 10 the distance and is also usually independent of the communication duration.

Thus, the use of an Internet network is attractive for long distance telephone communications and also for specialized communications with high rates per unit 15 time. This is particularly applicable for voice servers communicating special-purpose information.

An interface or switching device associated with a telephone handset that can be used to connect the user of the telephone network to the Internet network, is 20 proposed in international patent application No. WO98/13986, so that a subscriber to a telephone network

can communicate with other subscribers through the Internet network without needing to use expensive equipment such as a computer. With this device, the user can telephone another user equipped with the same 5 type of device passing through the Internet network instead of using a telephone line. To achieve this, the subscriber dials the called party's telephone number on his telephone handset in order to reach him through the telephone network, and then notifies his 10 interface device that he would like a communication through the Internet network. The interface devices of the calling party and the called party thus pass through the telephone network and exchange information necessary to automatically or semi-automatically get 15 into contact afterwards on the Internet network.

The invention is intended to facilitate access to multimedia voice servers through Internet type networks, particularly making use of the interface device of the type described in the international 20 patent application mentioned above.

Thus, the invention relates to a process for accessing at least one multimedia voice server through a computer communication network, particularly an Internet network, characterised in that each user is 25 provided either with a local interface device associated with a telephone handset, or with a telephone connected through a local loop in the telephone network, particularly a switched network, to an interface device located in a remote telephone 30 exchange managed by a telecommunications operator with which the user has taken out a subscription, and in that a connection is set up between the interface device and the multimedia voice server(s)

concerned through a service server in the computer communication network,

such that data sent by multimedia voice servers representing sounds and/or images pass through the 5 Internet network, and are received by the interface device and transmitted to the user,

the interface device is activated in order to set up a link between this device and the service server, by using:

10 - either a control device associated with the local interface, particularly a key on this device such as a key on a keypad,

15 - or a control device associated with the telephone connected to a remote interface device, this control device for example being a key on the telephone keypad,

20 a menu is transmitted through the link thus set up between the service server and the interface device and/or the telephone, presenting options for the related multimedia voice servers to the user,

such that the user may receive messages such as the following, for example:

"Welcome to the service server, through which you can access:

25 - the multimedia voice server for new disks:  
press 1,

- the multimedia voice server for today's news:  
press 2,

- the multimedia voice server for the weather:  
30 press 3,  
etc.",

options in the transmitted menu are selected using the control device, and

links are set up with the selected multimedia voice server(s),

such that, for example, the user can press key 3 on the keypad of his telephone or his interface device, 5 to receive information about the weather.

If an interface device provided is located in a remote telephone exchange, it is useful if a user does not need an interface device, but all that he has to do is to take out a subscription to the telephone service 10 through Internet and that the cost to the operator can be moderate since the interface devices can be shared between several subscribers.

Note that in the above and in the following, the expression "voice server" or "multimedia voice server" 15 must be understood as being a source capable of generating sounds and/or images (in the broad sense of the term, in other words also comprising symbols, and particularly graphic symbols and text).

It will be appreciated that the process according 20 to the invention, as a result of the service server and the control device associated with the local interface device or the telephone, can be used to easily select the voice servers. For example, the user will receive the menu in the form of a message informing him of the key 25 number that he should press (on the interface device or the telephone) to access the available voice servers.

In one embodiment, the interface device comprises a display screen and image data originating from multimedia voice servers are displayed.

30 As an alternative, these image data originating from voice servers are displayed on the telephone screen.

Thus, it is quite possible to take full advantage of the telecommunications network since it is possible to access voice data and image data at the same time.

In one embodiment, structures can be personalized 5 on the service server, for example by means of a configuration server.

In other words, for example it is possible to use a configuration server to preselect multimedia voice servers to be presented in a menu, and possibly to 10 determine the order in which these preselected services will be presented.

As an illustration of this embodiment, the user can choose between the following (in the order given) 15 1: weather news; 2: horoscope; 3: today's news (for example French national news) and disk news, such as new disks released by Madonna.

According to one embodiment, the interface device can be programmed such that it is automatically connected at a predetermined moment and preferably 20 according to the preselected structure, to the voice servers concerned through the service server. In this case, it is preferable to store data received from voice servers in a memory in the interface device.

For example, the information is retrieved and 25 stored overnight and the user can look at it in the morning when he gets up.

If a remote interface device is provided in a telephone exchange, it is possible to share the connection between the interface device at the 30 telephone exchange and the service server between several subscribers, for example identified by a subscriber code.

The invention also relates to a system used to access at least one voice server through a computer communication network, particularly an Internet type network, this system being characterised in that each

5 user is provided with:

- either a telephone connected to an interface device located in a remote telephone exchange managed by a telecommunications operator with which the user has taken out a subscription, through a local loop in
- 10 the switched telephone network,
- or a local interface device associated with a telephone handset,

and in that the system comprises:

- a link between the interface device and the said
- 15 multimedia voice server(s) concerned, through a service server in the computer communication network,

such that data issued by the multimedia voice servers representing the sounds and/or images pass through the Internet network and are received by the

20 interface device and transmitted to the user,

- means to activate the interface device in order to set up the link between the interface device and the service server; these activation means comprise:

25 • either a control device associated with a local interface device, particularly a key on a keypad of this interface device,

• or a control device associated with the telephone connected to the remote interface device, and particularly a key on a telephone keypad,

30 this control device being actuated by the user,

- means of distributing a menu through the link thus formed between the service server and the

interface device and/or the telephone, offering related multimedia voice server options to the user, such that the user may for example receive the following messages:

5 "Welcome to the service server, through which you can access:

press 1,  
- the multimedia voice server for new disks:

10 press 2,  
- the multimedia voice server for today's news:

press 3,  
etc.",

15 - means of selecting the options chosen among the options in the distributed menu, by using the control device,

- switching means to set up links with the voice server(s) thus selected, and

20 - reception means, particularly a loudspeaker and/or a screen, to receive information from the selected voice server,

such that, for example, the user can press key 3 on the keypad of his telephone or the keypad of his interface device, to set up a link with the weather server and receive the corresponding information.

In one embodiment, the local interface device or the telephone receiver also comprises a screen to display image data from multimedia voice servers.

Furthermore, it is advantageous if this system 30 comprises personalisation means, and particularly a configuration server to personalize structures in the service server menu, in other words to preselect voice

servers for each user or user group, and possibly the order in which these servers are presented.

Thus, the user can choose a structure like the following:

- 5        "1 - Weather",
- "2 - Horoscope",
- "3 - French news",
- "4 - Madonna's new disks".

In one embodiment, the system comprises means of 10 programming the interface device so that it will connect automatically at a given time, for example according to a predetermined structure, to the preselected multimedia voice servers through the service server. It is then advantageous to plan to 15 store data received in the multimedia voice server, in a memory area in the interface device.

Thus, for example, the user can access information that has been retrieved and stored overnight, when he gets up in the morning.

20        If the interface device is remote, in other words is installed in a telephone exchange, it is preferable to share this interface device between several subscribers, for example identified by a subscriber code.

25        The invention also relates to an interface device that can be used to access at least one multimedia voice server through a computer communication network, particularly an Internet type network, characterised in that the communications link is made through a service 30 server, and this interface device comprises:

      - means to activate this interface device in order to set up a link between this interface device and the service server; the activation means comprising a

control device, particularly a key on a keypad of the said interface device that can be actuated by the user, either locally or remotely, using a telephone connected to the interface device, and

5 - means to receive a menu distributed by the service server, this menu offering options for related multimedia voice servers to the user.

Thus, for example, the user receives the following messages:

10 "Welcome to the service server, through which you can access:

- the multimedia voice server for new disks:  
type 1,

- the multimedia voice server for today's news:

15 press 2,

- the multimedia voice server for the weather:

press 3,

etc.",

For example, the interface device may include a 20 display screen to display image data from the multimedia voice servers.

It may also comprise personalisation means, particularly a configuration server control device to personalize structures in the service server menu.

25 Thus, the user can choose a structure like the following:

"1 - Weather",

"2 - Horoscope",

"3 - French news",

30 "4 - Madonna's new disks".

In one embodiment, the interface device comprises programming means such that the device automatically connects itself at a given moment, and preferably

according to a predetermined structure, through the service server to the multimedia voice servers concerned, and means for storing the data received from the multimedia voice servers in memory, particularly a  
5 memory area.

Thus, for example, the user can access information that was retrieved and stored during the night when he gets up in the morning.

In one embodiment, means of reception of the  
10 interface device can be used for reception of compressed data and therefore comprise digital compression means, and obviously a digital/analogue converter such that the user can hear and/or see the data sent from the server.

15 Other characteristics and advantages of the invention will become clear after reading the description of some of its embodiments, with reference to the attached drawings in which:

FIGURE 1 is a diagram of a system according to the  
20 invention, and

FIGURE 2 is a diagram similar to the diagram in FIGURE 1 for an alternative.

The system 10 shown in FIGURE 1 corresponds to the case in which the interface device is located in a  
25 telephone exchange and not on the subscriber's premises.

Thus, the system 10 shown in FIGURE 1 comprises firstly a telephone network 12 such as a switched telephone network, and secondly a computer network 14, 30 for example an Internet type network.

The telephone network 10 conventionally comprises a set of nodes or local loops 16<sub>1</sub>, 16<sub>2</sub>, 16<sub>n</sub>, forming subscriber access nodes to this network 10.

Each loop 16<sub>i</sub> comprises a telephone exchange 18<sub>i</sub> used to direct telephone communications either to a subscriber in the same local loop, or to a subscriber in another local loop. Furthermore, a switching (or 5 interface) device 20<sub>i</sub> is associated with each telephone exchange 18<sub>i</sub>, that can be used to connect the loop to the Internet network 14. For example, this connection is made through access suppliers 22<sub>i</sub>.

In this embodiment, the switching device 20<sub>i</sub> is 10 permanently connected to the network 14.

Each of these devices 20<sub>i</sub> comprises an IP address such that the corresponding telephone exchange (and therefore the local loop) can easily be connected to the other interface (or switching) devices with the 15 same network nature.

This IP address of each interface device may be transmitted directly through the telephone network 10 to the switching devices in other telephone exchanges.

As an alternative, the connection between the 20 switching devices is made through a specific server 24 in the network 14 containing all IP addresses of telephone exchange switching devices. In other words, the server 24 can be used to set up communications between telephone exchanges through the network 14.

25 Thus, in each loop 16<sub>i</sub>, the switching device 20<sub>i</sub> can be used to transfer communications set up through the telephone network 10, to the Internet network 14.

A telephone communication to the Internet network 14 is switched at the caller's end by means of a 30 control signal originating from the telephone 26<sub>i</sub> used by this calling subscriber. The subscriber's telephone is provided with a special key (not shown) for this

purpose. As an alternative, the switching control signal may be sent by pressing a key combination.

At the called party's end, the switching device in the corresponding telephone exchange is switched to the 5 network 14 under the control of a specific signal received through the Internet network 14. As an alternative, this switching is done by pressing a key, or several keys, on the called party's telephone handset 26<sub>i</sub>.

10 In the above, it is assumed that each switching device 20<sub>i</sub> is associated with all subscribers in the corresponding local loop 16<sub>i</sub>. As an alternative, the loop 16<sub>i</sub> comprises several switching devices, with a limited number of users being assigned to each of these 15 devices.

In one embodiment, the possibility of making telephone communications through the Internet network 14 is a non-compulsory option. In this case, the corresponding switching device 20<sub>i</sub> can only be actuated 20 if the user has taken out a subscription. In this example, the switching device recognizes that the user has taken out the appropriate subscription, either due to the fact that it contains authorized subscriber numbers in memory or because the control signal sent by 25 the handset 26<sub>i</sub> contains a specific authorization code for access to the Internet type network 14.

According to one important provision of the invention, the network 14 also comprises a server 27 called a "service server" to which the multimedia voice 30 servers V<sub>1</sub>, V<sub>2</sub>, V<sub>3</sub>, V<sub>4</sub> are connected.

Each voice server supplies information of a specific nature such as weather information, horoscope, literary or musical information, or show programs, etc.

This information is sent in voice form and in graphic or image form.

The server 26 distributes a menu proposing options on related multimedia voice servers V<sub>1</sub>, V<sub>2</sub>, V<sub>3</sub>, V<sub>4</sub>, to 5 the user.

Operation is as follows:

When a subscriber to the telephone network 10 who has taken out a subscription to communications through the Internet network 14, would like to call a voice 10 server, he presses on a specific key on his telephone 26<sub>i</sub> in order to set up a link with a service server 27. Under these conditions, the server 27 returns a menu in voice form indicating the multimedia voice servers V<sub>1</sub>, V<sub>2</sub>, V<sub>3</sub>, V<sub>4</sub> to which it is connected. For example, this 15 menu message may be as follows:

"To access to disk news: press 1,  
To access to the news: press 2,  
To access to weather information: press 3;  
etc."

20 This voice information is preferably transmitted in the form of compressed digital packets. In this case, the interface device 20<sub>i</sub> located in the local loop 16<sub>i</sub> includes digital/analogue decompression and conversion means.

25 When the user presses on the number indicated to him, the signal is transmitted through the Internet network 14 to the server 27 that puts the user into communication with the selected multimedia voice server.

30 In the embodiment of the invention shown in FIGURE 2, the interface device 30<sub>i</sub> is located at the subscriber. It is of the type described in international application WO98/13986. This device is

associated with the telephone handset 26<sub>i</sub>. It is connected to a display device 32<sub>i</sub>. This device may also be integrated in the interface 30<sub>i</sub>.

5 This device 30<sub>i</sub> can be used to set up telephone or videophone communications through the Internet network 14. According to the invention, it also provides access to multimedia voice servers V<sub>1</sub>, V<sub>2</sub>, V<sub>3</sub>, V<sub>4</sub> through a service server 27 as described above in relation to FIGURE 1.

10 As an alternative, the interface device 30<sub>i</sub> is a specialised device for access to voice servers.

15 Regardless of the embodiment, the address of the server 27 is input using the keypad on the interface device 30<sub>i</sub> to connect this device to the Internet network and to access the server 27. This address can also be sent automatically, being initially located in the memory of the interface device 30<sub>i</sub>. In the latter case, all that is necessary is to press once on a key or simply to switch device 30<sub>i</sub> on.

20 Once the connection has been set up, operation is the same as in the case described above with relation to FIGURE 1. However, if the servers V<sub>1</sub>, V<sub>2</sub>, V<sub>3</sub>, V<sub>4</sub> send displayable data such as text, graphics and images, these data can be received and displayed on the 25 screen of the device 32<sub>i</sub>. Note also that in this case, the menu can be displayed on the screen of the device 32<sub>i</sub> instead of or in addition to the voice menu.

30 The choices made after receiving the menu can be selected using keys on the keypad of the telephone handset 26<sub>i</sub> or of the device 30<sub>i</sub>.

Considering that the voice information and/or image information is usually transmitted by servers V<sub>1</sub>, V<sub>2</sub>, V<sub>3</sub>, V<sub>4</sub> in the form of compressed digital packets,

decompression means and a digital/analogue converter are provided in the device 30<sub>i</sub>.

Obviously, data transmitted using the keys on the telephone handset 26<sub>i</sub> or the device 30<sub>i</sub> are formatted 5 so that they can be transmitted through the network 14 and can be interpreted by the server 27.

In one embodiment that is equally applicable to the example in FIGURE 1 and in FIGURE 2, a menu personalisation feature is provided. This 10 personalisation consists of preselecting servers for each subscriber and/or an individual presentation of the menu that can be listened to and/or displayed.

For example, this personalisation may be done using a configuration means associated with the server 15 27 that makes the personalized preselection and presentation when it receives a connection request with identification data of the subscriber who asked for this personalisation.

The configuration may be made in various ways. It 20 may be requested using a written form and/or a form sent on the Internet network, or by telephone call. It is also possible to ask that this configuration should be made automatically through the Internet network, using commands entered using the keypad on the device 25 30<sub>i</sub> or the telephone handset 26<sub>i</sub>.

According to another provision of the invention, the device 30<sub>i</sub> comprises timing means (not shown), preferably programmable, that enable this device to automatically start itself so that it can automatically 30 connect itself to one or several preselected server(s) and to save data provided by these servers in a memory (not shown).

In this case, the configuration means located in server 27 or associated with server 27 are used for connection to the selected server(s). Obviously, in this case there is no need for the server 27 to 5 distribute the menu.

After receiving information supplied by the server, the device 30i disconnects itself.

The user can view the data stored in memory at any time without needing to connect himself.